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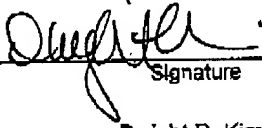
NO. 7513 P. 6

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PRE-APPEAL BRIEF REQUEST FOR REVIEW		Docket Number (Optional) 61755 (51035)	
		Application Number 09/520,004 - Conf. 7731	Filed March 6, 2000
		First Named Inventor J. P. Maye	
		Art Unit 1794	Examiner V. Stulii
<p>Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.</p> <p>This request is being filed with a notice of appeal.</p> <p>The review is requested for the reason(s) stated on the attached sheet(s). Note: No more than five (5) pages may be provided.</p> <p>I am the</p> <p><input type="checkbox"/> applicant /inventor.</p> <p><input type="checkbox"/> assignee of record of the entire interest. See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed. (Form PTO/SB/96)</p> <p><input checked="" type="checkbox"/> attorney or agent of record. Registration number 57,665</p> <p><input type="checkbox"/> attorney or agent acting under 37 CFR 1.34. Registration number if acting under 37 CFR 1.34.</p> <p>NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below*.</p>			
<input type="checkbox"/> *Total of 1 forms are submitted.		 Signature Dwight D. Kim Typed or printed name (617) 517-5588 Telephone number December 16, 2009 Date	

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NO. 7518 RE P. 7 ED  
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Docket No. 61755 (51035)

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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In re Patent Application of:  
John P. Maye et al.

Application No.: 09/520,004

Confirmation No.: 7731

Filed: March 6, 2000

Art. Unit: 1794

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For: PROCESS FOR CONTROLLING MICRO-  
ORGANISMS IN AN AQUEOUS PROCESS  
MEDIUM

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Examiner: V. Stulii

MS AF  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450**REMARKS: PRE-APPEAL BRIEF REQUEST FOR REVIEW**

The following remarks support Applicant's "Pre-Appeal Brief Request for Review" filed herewith in the above-referenced application. These remarks constitute no more than five pages, and are being filed with a Notice of Appeal, thereby satisfying the requirements.

Claims 2-6, 8-11, 14, 16, 20 and 21 were rejected under 35 USC 103(a) as obvious over US 5,082,975 (herein referred to as "Todd"). This rejection is respectfully traversed.

Claims 7 and 16-19 were rejected under 35 USC 103(a) as obvious over US 5,082,975 (Todd '975) in view of Simpson (J. Inst. Brew. 1987, vol. 93, pp. 405-406 (herein referred to as Simpson)). This rejection is respectfully traversed.

Claims 12 and 13 were rejected under 35 USC 103(a) as obvious over US 5,082,975 (Todd) in view of Simpson, and further in view of US 4,002,683 (Todd 2). This rejection is respectfully traversed.

Applicant respectfully requests review of the Final Office Action in the above-referenced application. No amendments are being filed with this request.

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U.S. Serial No. 09/520,004

Remarks: Pre-Appeal Brief Request for Review

Applicant is filing the "Pre-Appeal Brief Request for Review" based on the following clear errors and/or omissions in the Final Office Action mailed on November 16, 2009.

First Clear Error and/or Omission in the Final Office Action:

The Examiner has made a first clear error and/or omission at least because the Todd reference (US 5,082,975), whether alone or in combination with Simpson (J. Inst. Brew. 1987, 93, pp. 405) or in combination with Simpson and further in view of Todd (US 4,002,683; herein referred to as "Todd 2"), does not teach or suggest a method including "combining the aqueous alkaline hop acid solution with yeast in a yeast growing tank wherein yeast growing proceeds under aerobic conditions" and "introducing the yeast/aqueous alkaline hop acid mixture into an aqueous process medium for fermentation under anaerobic conditions;" as recited in steps (b) and (c), respectively, of independent claim 2.

On page 6, first paragraph, lines 2-7 of the Final Office Action, it is alleged that one of ordinary skill in the art would have been motivated to add hop acids solutions to the yeast growing tank, and then to transfer the mixture to the fermentation vessel. For support, the Examiner indicates that Todd discloses the addition of hexahydrolupulone to a yeast culture to inhibit the growth of Lactobacillus therein (Todd, column 3, lines 7-8). However, such a broadbrush interpretation fails to recognize fundamental differences in the Todd subject matter compared to Applicants' claimed subject matter. The Todd teaching must inherently relate to anaerobic conditions, which are distinct and distinguishable from Applicants' claimed aerobic conditions in the yeast growing step. Todd's disclosure that treatment of a sugar solution inoculated with yeast, with a hexahydrolupulone aqueous solution, did NOT inhibit fermentation (Todd, column 8, lines 3-4; emphasis added) further evidences that Todd's teachings relate only to anaerobic conditions, and not Applicants' aerobic yeast growing step.

The Applicants' currently pending claims include a method step wherein a hop acid salt solution and yeast are added into a yeast growing tank under aerobic conditions. Under such reaction conditions, yeast will be growing and fermentation will be minimized due to the aerobic conditions. This is clearly distinct from the Todd reference which states that treatment of a 10%

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sugar solution, inoculated with yeast, with a 20% hexahydrolupulone solution, did NOT inhibit fermentation. Todd simply does not teach or suggest a separate step to grow yeast under aerobic conditions that minimizes fermentation. A more thorough argument can be found in the Applicants' amendment (June 11, 2009), at page 7, paragraph 3, through page 8, paragraph 3.

In addition to the above, the subject matter of Todd actually is focused on synthetic methodology for making hexahydrolupulone compounds. Aqueous alkaline solutions of hexahydrolupulone or beta hop acids happen to be provided in Examples 1 and 5 of Todd, but such alkaline solutions of hop acids are NOT used by Todd to inhibit bacterial growth. The aqueous alkaline solutions of hop acids presented by Todd are made for the purpose of purifying and/or extracting (i.e., separating from undesired catalyst poisons) the hop acids after a hydrogenation reaction, then acidified to give back more highly purified hop acids (in their acid form). Example 6 of Todd provides for the use of hexahydrolupulone to inhibit bacterial growth using hexahydrolupulone dissolved in water and glycerine. Example 6 does NOT provide for an aqueous alkaline solution, nor for an aqueous alkaline solution of hop acid used to inhibit bacterial growth.

The only exemplification of the use of hop acids to inhibit bacteria is found in Example 6, but Example 6 simply does not use an aqueous alkaline solution of hop acids, and such a solution is not used prior to fermentation. A more thorough argument can be found in the Applicants' amendment (September 19, 2008), at page 6, paragraph 4, through page 7, paragraph 2. Thus, Todd simply does not provide a teaching or suggestion of an aqueous alkaline solution of hop acid used to inhibit bacterial growth, and certainly not relating to pre-fermentation yeast treatment under aerobic conditions (as claimed by Applicants).

Simpson does not provide a method of adding hop acids to yeast in a yeast growing tank for yeast propagation under aerobic conditions (i.e., pre-fermentation). Simpson relates to a study of acid washing of pitched yeast slurries. Thus, Simpson relates to used yeast (that is, post fermentation yeast), which is different and distinguishable from Applicants' claims (having a pre-fermentation yeast treatment step) as currently presented. No passage in Simpson has been cited to properly support any teaching relating to pre-fermentation yeast treatment under aerobic

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conditions (as claimed by Applicants).

Todd 2 is directed towards the isomerization of alpha hop acids and does not provide any teaching or suggestion of adding hop acids to yeast in a yeast growing tank for yeast propagation under aerobic conditions. No passage in Todd 2 has been cited to properly support any teaching relating to pre-fermentation yeast treatment under aerobic conditions (as claimed by Applicants).

Neither Simpson or Todd 2 rectifies the deficiencies of Todd in providing the Applicants' claimed invention. Additionally, neither Simpson or Todd 2 provides any teaching or suggestion of adding an aqueous alkaline solution of hop acids to yeast in a yeast growing tank under aerobic conditions.

Second Clear Error and/or Omission in the Final Office Action:

The Examiner has made a second clear error and/or omission at least because the experiments and statements of the declaration under 37 CFR 1.132, executed by Chris Most and filed on September 19, 2008, was not given due consideration and its substance was not fully appreciated. The Office Action dated December 11, 2008, indicates at pages 5 and 6 that the declaration was not persuasive due to the Todd reference, as described above. Specifically, the Examiner states that Todd provides various instances of using hop acids and yeast to inhibit bacteria growth, and that it would have been obvious to one of ordinary skill in the art to modify the teachings of Todd to use bacteria inhibiting amounts of hop acid during yeast growth (pages 6-7 of the Office Action dated December 11, 2008).

Mr. Most (who is not an applicant in this matter) supervised or conducted experiments to examine the effect of hop acids in fuel ethanol production. Mr. Most indicates that it is his expert opinion that one of ordinary skill in this field would not have expected the use of hops acids in the manner described in Applicants' application to have any appreciable effects on fuel ethanol production.

Mr. Most also indicated that the addition of aqueous alkaline solutions of hop acids, administered pre-fermentation during the production of fuel ethanol in processes conducted by him or under his supervision, provided numerous surprising and unexpected benefits in the fuel

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Remarks: Pre-Appeal Brief Request for Review

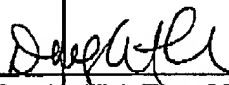
ethanol production process including healthier yeast counts, increased throughput capacity, improved maintenance of acceptable alcohol levels, and increased "backset." Specifically, the Most Declaration states that increased "backset" is particularly useful in decreasing cost and starting materials through water recycling, greater pollution control, reduction of liquid residue required, and reduction in acidity.

None of the aforementioned advantages is taught or suggested by Todd, whether alone or in combination with Simpson and/or Todd 2. Thus even, *arguendo*, were a *prima facie* case of obviousness established based on Todd alone or in combination with Simpson and/or Todd 2 (which Applicants do not believe has been established), the Most Declaration provides a showing of surprising and unexpected benefits (both in variety and level) of Applicants' claimed subject matter that is more than sufficient to overcome the rejection. Moreover, nothing in the Office Action addresses with particularity why the Most Declaration and its substance should not be accorded appropriate credence.

Applicants respectfully submit that based on at least the foregoing reasons, all of the claims under final rejection are in condition for allowance and should be allowed, and that the Final Office Action should be withdrawn.

Respectfully submitted,

Date: December 16, 2009

  
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